

## IN THE CLAIMS

Please replace the claims as filed with the claims set forth below. This listing of claims will replace all prior versions, and listings, of claims in the application:

1-21. Cancelled.

22. (Currently Amended) A detection system comprising:  
a light emitting diode (LED) ~~having comprising~~ at least one (semi)conductive electroluminescent active layer which ~~comprises~~ provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light from the active layer ~~electroluminescent functionalities, wherein the emission spectrum of the diode exhibits at least two intensity maxima and wherein the active layer comprises~~ ing at least one electroluminescent organic compound; and  
a detector comprising a signal channel and a separate reference channel in optical communication with the LED.

23. (Previously Presented) The detection system according to claim 22, wherein the LED comprises an electroluminescent compound selected from a group consisting of electroluminescent polymers, electroluminescent oligomeric dyes and electroluminescent single dyes.

24. (Previously Presented) The detection system according to claim 22, wherein the LED comprises an electroluminescent polymer and an electroluminescent single dye.

25. (Currently Amended) The detection system according to claim 22, wherein the at least two different electroluminescent functionalities-intensity maxima of the different wavelengths are formed emitted by a first and a second electroluminescent compound, wherein the first compound has a maximum in the emission spectrum at a different wavelength than the second compound.

26. (Currently Amended) The detection system according to claim 22, wherein the at least two different electroluminescent functionalities-intensity maxima of the different wavelengths are emitted by ~~form part of~~ one electroluminescent compound.

27. (Previously Presented) The detection system according to claim 26, wherein the compound is selected from a group consisting of copolymers having at least two different electroluminescent segments, electroluminescent polymers derivatized with at least one electroluminescent dye, and non-electroluminescent compounds, derivatized with at least two different electroluminescent dyes.

28. (Previously Presented) The detection system according claim 22, wherein at least one electroluminescent compound is selected from a group consisting of poly(paraphenylene vinylene) compounds, polyfluorene compounds, copolymers of said polymers and polymers derivatized with one or more of said dyes.

29. (Previously Presented) The detection system according to claim 22, wherein the emission spectrum of the LED is bimodal.

30. (Previously Presented) The detection system according to claim 22, wherein the difference in wavelength between two consecutive maxima in the emission spectrum of the LED is at least 40 nm.

31. (Previously Presented) The detection system according to claim 22, wherein the LED's emission spectrum has at least one maximum, preferably at least two maxima, in the wavelength range of 190-1500 nm, preferably of 400-800 nm.

32. (Previously Presented) The detection system according to claim 22, wherein the intensity ratio between two consecutive maxima in the emission spectrum is in the range of 0.5 to 1.

33. (Previously Presented) The detection system according to claim 22, wherein in the emission spectrum the peak to valley ratio of the first and the second maximum is at least 2.

34. (Previously Presented) The detection system according to claim 22, wherein the LED comprises a filter.

35. (Previously Presented) The detection system according to claim 34 wherein the LED comprises a filter with notch filter properties, which filter selectively has at least a reduced transmission of light of a wavelength between two consecutive intensity maxima.

36.-41. (Cancelled)

42. (Currently Amended) The detection system of claim 22 wherein the detector comprises at least one photodiode for each of said channels.

43. (New) The detection system of claim 42, wherein the photodiodes are polymeric photodiodes.

44. (New) The detection system of claim 22, wherein the detection system comprises a sample portion in which or on which a sample is present during detection.

45. (New) The detection system of claim 44, wherein the sample portion comprises a coating which is capable of interacting with a component to be measured, so that an absorption property, a fluorescence property or a refractive index of the coating changes upon interaction.

46. (New) The detection system of claim 45, wherein the coating is suitable for interacting with a component selected from the group of polar vapors, non-polar vapors, CO<sub>2</sub> and ammonia.

47. (New) The detection system of claim 22, wherein the light emitting diode and the detector are present on or in a carrier material, wherein the carrier material is flexible.